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NOTES AND NEWS.

MR. AND MRS. T. S. Brandegee have removed to San Diego, taking with them their botanical library and herbarium.

WITH THE CURRENT number (March) of *Zoe*, completing the fourth volume, it is announced that its publication will cease for the present.

IN THE Bulletin of the Iowa State Board of Health, 7: 9, J. Christian Bay gives a brief account of bacteriological work in medical science.

PARASITISM OF *Nostoc* and *Chlorococcum* upon *Gunnera* is treated by B. Jönsson in an illustrated article in the *Botaniska Notiser* for 1894, pp. 1-20.

THE MORE extensive use of pith in hand and microtome sectioning is pleaded for by Dr. Alfred C. Stokes in the February number of Queen's *Microscopical Bulletin*.

DR. THOMAS MORONG, curator of Columbia College, died on Thursday, April 26th. A sketch of his life and botanical work will appear in the next number of the GAZETTE.

DR. DOUGLAS H. CAMPBELL, of Stanford University, expects to sail for Europe early in June to be absent six months. He has in preparation a general work on the archegoniates.

MR. F. H. KNOWLTON has published in Bull. 105, U. S. Geol. Surv., an annotated list of the fossil plants of the Bozeman (Montana) coal field, with a table of distribution, and descriptions of new species.

MR. ERWIN F. SMITH is editing a very interesting department of *Science* under the title "Memorabilia Botanica," in which matters of current interest and publication are presented in a full and attractive way.

THE SPECIES of *Isoetes* of central France are characterized by M. l'Abbé F. Hy in *Journal de Botanique* (March 1). The three sections are represented as follows: Aquaticæ, three species; Amphibiæ, seven species; Terrestres, two species.

MR. HERBERT L. JONES will have charge of the summer course in botany at Harvard next summer. The only course offered is one in "phanerogamic botany," which means the general morphology and classification of flowering plants and ferns.

AN ENUMERATION of the fungous flora of Portugal by P. A. Saccardo (Boletim da Sociedade Broteriana, 11: 9-70. 1893) gives a total of 1,178 species, of which the four groups of Agaricineæ, Sphaeriaceæ, Sphaeropsidæ and Hyphomycetæ embrace nearly two-thirds.

A NEW DIVISION, the Division of Agricultural Soils, has just been created in the U.S. Department of Agriculture, as a part of the Weather Bureau, with Prof. Milton Whitney in charge. It is proposed to make a study of the relation of soil to crops and of soil physics.

BOURQUELOT has found¹ that *Aspergillus niger*, when cultivated in a fluid medium to maturity, excreted a considerable number and variety of enzymes. Invertase, maltase, trehalase and inulase act on sugars; diastase on starch; emulsin on glucosides; and trypsin and pepsin on proteids.

PROFESSOR L. H. PAMMEL, of Ames, Iowa, has published some "Notes on the flora of Texas," being an account of the flowering plants noted in central Texas during a visit in the summer of 1888 and 1889 while engaged in studying the "root-rot" of cotton. The list contains 291 numbers.

THE EXPERIMENT STATIONS of Europe are being described in a series of illustrated articles in the *Experiment Station Record*. The station at Bernberg, famous for the work of Dr. Hellriegel upon the assimilation of free nitrogen by the Leguminosæ, and kindred subjects, is the last one treated.

WE ARE informed by Dr. W. Thornton Parker, in *Science* (Feb. 23), that "the loco-plant is regarded by Professor Gray, of Harvard University, as the *Astragalus legum*, a peculiar species of the Vetch tribe, abundant in the region of the 'Texan Panhandle.'" We wonder where Dr. Gray made such a statement!

AMONG Messrs. Swan Sonnenschein & Co.'s announcements for the spring of 1894, we note the Handbook of Systematic Botany, by Dr. E. Warming, Professor of Botany in the University of Stockholm, to be translated and edited by M. C. Potter; Flowering Plants, by James Britten; and Grasses, by W. Hutchinson, the two latter in the Young Collector Series.

THE QUARTERLY BULLETIN of the University of Minnesota has reached the first number of its second volume. The last issue contains a half dozen botanical papers. All but one, a preliminary note by Prof. Conway MacMillan on the casting off of parts of the aquatic hairs of Azolla, are résumés of articles published in different serials and already noticed in these pages.

A NEW "sand plum" from Kansas is described and figured by Professor Sargent in *Garden and Forest* (April 4). It is named *P. Watsoni*, from Dr. Louis Watson, of Ellis, Kansas, brother of the late Dr. Sereno Watson, by whom the seed was sent. The plant has been growing in the Arnold Arboretum since 1880, and has been mistaken by travellers in the west for *P. angustifolia*. It is abundant on the banks of the Saline River.

IN THE *Am. Micr. Jour.* J. Christian Bay is publishing a series of papers on the study of yeasts. The February number has descriptions and figures of the Hansen culture box and of a new infection needle. A description of the latter also appears in *Ber. d. deutsch. Bot. Gesells.* 12: 1. 1894. The same number of the *Journal* also contains a paper on the aeration of tissues and organs in Mikania and other phanerogams, by W. W. Rowlee.

FOR MAKING microscopical preparations of algæ which preserve

¹Bull. Soc. bot. de France 40: 230. 1893. Cf. Bot. Cent. 57: 200. 1894.

their structural characters unchanged, Lemaire proposes¹ the following method: Fix in a saturated watery solution of uranic acetate, with 0.3 per cent. chrome alum for 6-12^h; wash thoroughly; transfer to slide into two or three drops of 10 per cent. glycerin (in water); concentrate by evaporation of water under bell jar with CaCl₂; mount in Kaiser's glycerin jelly or Behrens' ichthyolglycerin.

MISS ANNA MURRAY VAIL has published in *Bull. Torr. Bot. Club* (March 24) the result of a study of *Psoralea* in America. Twenty-one species of palmate-leaved forms are defined, and 14 species of pinnate-leaved forms. Fewer changes in nomenclature were found to be necessary than usual in such a revision, and but one or two new species are proposed. Dr. Otto Kuntze is not followed in transferring all the species to *Lotodes* Siegesbeck.

FORSCHUNGS-BERICHTE über Lebensmittel und ihre Beziehungen zur Hygiene, über forense Chemie und Pharmakognosie is the title of a new journal edited by R. Emmerich, K. Goebel, A. Hilger, L. Pfeiffer, and R. Sendtner, all of Munich. Dr. E. Wolff's new scientific publishing house in Munich will publish the journal. No. 1 contains the beginning of a paper on the anatomy of the *Cinnamomum* bark, by R. Pfister (pp. 6-13). The list of contributors includes many distinguished names.—BAY.

THE MEMBERSHIP of the German Botanical Society, corrected to February, 1894, as given in the pages of the last annual volume of the *Berichte*, shows a total of 451, of which 27 are corresponding members and eight honorary members. The list includes five Americans: Dr. W. G. Farlow of Harvard University, Mr. J. Christian Bay of the Iowa Board of Health, Dr. Douglas H. Campbell of Leland Stanford University, Dr. Geo. L. Goodale of Harvard University, and Dr. Albert Schneider of Illinois Experiment Station.

PROFESSOR E. L. GREENE is discussing and shifting generic lines in the Compositæ. In *Erythea* (April) the "Astereæ" are considered. The merging of *Aster* and *Solidago*, as has been done by Dr. Kuntze, is not accepted, it being claimed that there is such a thing as a genus *Solidago* distinct from *Aster* if it is stripped of its disguising appendages. He would, therefore, raise *Euthamia* to generic rank, and also exclude Nuttall's *Chrysoma*. Several species, also, that have been referred to *Aplopappus* are brought together under Sir William Hooker's genus *Pyrrocoma*.

TWO VIGOROUS articles in disapproving criticism of the present methods of teaching botany in the secondary schools have lately appeared in *Science*. One is by Miss K. E. Golden, of Purdue University; the other by Geo. H. Hudson, vice-principal of the State Normal and Training School at Plattsburgh, N. Y. Mr. Hudson wields a trenchant pen and his characterization of botanical instruction in high schools, though severe, is sadly too true. We hope he will reprint that article where as many teachers as possible will see it. We are entering upon the period of the *renaissance* for elementary as well as advanced instruction in botany.

¹Jour. de Bot. 7: 434. 1893.

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A NEW *Ostrya*, from Arizona (Yavapai county), within the Grand Cañon of the Colorado, is described and figured by Mr. F. V. Coville in *Garden and Forest* (March 21). Our only other species (*O. Virginiana*) extends westward to the meridian of E. Nebraska and E. Texas, and to discover a second species nearly a thousand miles west of this is a matter of considerable interest. The species was originally collected by Mr. Knowlton in 1889, without fruit, but the description was wisely withheld until fruiting specimens were obtained by Mr. Toumey in 1892. It bears the name of its original discoverer, being called *O. Knowltoni*.

THE NEW HAMPSHIRE COLLEGE of Agriculture and the Mechanic Arts, coöperating with Superintendent Gowing of the State Department of Public Instruction, will institute next July a Summer School of Biology, especially adapted to the needs of teachers in the secondary schools. The instruction in botany will be given by Principal Charles H. Clark, A. M., of Sanborn Seminary, Kingston, N. H. The school will open Thursday, July 5th, and continue until Saturday, August 4th. The course of study will cover the line of work in botany and zoölogy recommended in the recent report of the Committee on Secondary School Studies.

ANOTHER number of *Minnesota Botanical Studies* has appeared, bearing date of March 21st. Its six papers are: Nitrogen assimilation by *Isopyrum biternatum*, by D. T. MacDougal, in which the tentative conclusion is reached that the tubers are not primarily storage organs, but are probably concerned in the assimilation of free nitrogen; Morphology of hepatic elaters, by Josephine E. Tilden, in which the conditions of branching in the elaters of *Conocephalus conicus* are especially considered; Revised descriptions of Minnesota *Astragali*, Synonymy of the North American species of *Juncodes* (*Luzula*), and Further extensions of plant ranges, by E. P. Sheldon; Determinations of some Minnesota lichens, by W. D. Frost.

IN *Zoe* for March Mr. T. S. Brandegee continues his valuable studies of the flora of Lower California, a flora which he has done so much to elucidate. Over 70 plants new to the "Cape Region" are noted, several of them being new species, and one a new genus of *Compositæ*, dedicated to the distinguished botanical artist, Mr. C. E. Faxon. Mr. Brandegee also describes another new genus of *Compositæ* from the Coast range and dedicates it to Miss Alice Eastwood, the Curator of the herbarium of the California Academy of Science. *Faxonia* and *Eastwoodia* are each illustrated by a plate. The grasses of Mr. Brandegee's Lower California collection of 1893 are presented by Professor F. Lamson-Scribner.

IN THE *American Naturalist* (April) Professor L. H. Bailey asks the question, "Whence came the cultivated strawberry?" and answers that it is a direct modification of the Chili strawberry, *Fragaria Chilensis*. He shows that this satisfies "the demand of history, philosophy and botanical evidence," and that we will have to give up "the pleasant and patriotic hypothesis" that it is the offspring of our native berry. "The strawberry is an instance of the evolution of a type of plant in less than fifty years, which is so distinct from all others that three

species have been erected upon it, which has been uniformly kept distinct from other species by the botanists who had occasion to know it best, and which appears to have been rarely specifically associated with the species from which it sprung."

IN THE *Annals of Botany* (Dec. '93) Professor J. M. Macfarlane continues his observations on "pitchered insectivorous plants," illustrated by three plates. *Darlingtonia*, *Sarracenia*, *Heliamphora* and *Nepenthes* are chiefly considered histologically and morphologically and their adaptations for insect-catching discussed. A large amount of patient observation is recorded, and the whole contribution is a valuable addition to our knowledge of this peculiar group of plants. The probable genetic relationships of these four genera are presented in a graphic way, in which it appears that from the "common type" two main branches diverged, one giving rise to *Heliamphora*, *Sarracenia* and *Darlingtonia*, the last being an offshoot of the second, and the other giving rise to the great display of *Nepenthes*, in which the specific relations are traced out in a similar way.

THE STATION BULLETINS recently issued include leaf blight of the pear, by L. F. Kinney (R. I., no. 27); spraying potatoes, by L. R. Jones (Vt., no. 40), an admirable bulletin; spraying apples and pears against fungi, by H. H. Lamson; potato diseases, by S. B. Green (Minn., no. 32); rational selection of wheat for seed, and typhoid fever, by H. L. Bolley (N. D., no. 15), the latter topic including a description of the germ, and its separation from natural waters, which causes a particular kind of fever; and a provisional bibliography of the more important works published by the U. S. Department of Agriculture and the agricultural experiment stations of the United States from 1886 to 1893 inclusive, on fungous and bacterial diseases of economic plants, by W. C. Sturgis (Conn., no. 118), a very valuable and apparently complete bibliography, which will prove of much service to investigators and writers.

THE THIRD SESSION of the Hopkins Seaside Laboratory of Leland Stanford Junior University will begin Tuesday, June 12, 1894. The regular course of instruction will continue six weeks, closing July 21st, though investigators and students working without instruction may continue their work through the summer. The laboratory provides for three classes of students: investigators; students in the university, who wish to supplement their work; and students and teachers not members of the university who desire to pursue biological studies and to become acquainted with the practical methods of laboratory work. For this last group of workers regular courses are conducted in zoology and botany, accompanied by lectures and by individual instruction at the work table. Mr. Walter R. Shaw, instructor in botany, in the university, gives a course in the comparative morphology of algæ. Advanced courses may also be arranged for.

The January number of the *Berichte der deutschen botanischen Gesellschaft* contains a paper by Kamienski on new and undescribed *Utriculariæ*. Frank and Krüger have a paper on the effect of treatment with copper on *Solanum tuberosum*. A. Schneider presents the results of his *Rhizobia*-studies, and Julius Klein describes the *Bau der Cruci-*

ferenblüthe auf anatomischer Grundlage. J. Christian Bay describes and figures his new infection-needle. In the February number, De Vries' paper, *Eine Methode Zwangsdrehungen aufzusuchen* forms a fine supplement to his monograph on the same subject. W. Tonkoff has a very interesting communication on swellings of the petiole in *Atragene alpina* L., a climbing plant. H. Zukal makes a communication concerning the much debated cell-contents of *Cyanophyceæ*, and A. Wagner gives the results of his investigations of the anatomy and biology of *Strelitzia reginae*.—BAY.

PROFESSOR F. LAMSON-SCRIBNER has been appointed agrostologist of the Department of Agriculture, in the Division of Botany. This newly created position has thus been filled by our most critical student of grasses, and it will at once attract to itself the confidence and cooperation of botanists. The duties are as follows: "the identification of grasses and the investigation of forage plants in the Department; to prepare monographs on grasses; to care for the grasses of the herbarium; to identify such as may be sent for that purpose; to conduct correspondence on this subject, and to have charge of any special investigation of grasses and forage plants which may be undertaken by the Department." Professor Scribner needs no introduction to the readers of the GAZETTE, and the Department of Agriculture is to be congratulated upon this further evidence of its desire for competent scientific service.

WITH THE HELP of ten plates Mr. Hermann Schrenk discusses the parasitism of *Epiphegus Virginiana*, in a paper presented before the American Microscopical Society and now published in its Proceedings, 15: 91-128. A painstaking study of material and literature has evidently been made, though no very definite conclusions are reached concerning questions that were in doubt. There is much presented in work of this kind that may as well be omitted as not pertinent. If the study of each such parasite is to be preceded by an historical résumé of our knowledge of parasitism and a full account of the systematic relations of both host and parasite the resulting papers will be somewhat heavy and monotonous. It is necessary for the student to look up all this extraneous material but not to publish it. It seems to be a crying need just now, when such a multitude of contributions must be considered, for one to say what he has to say in the briefest possible way, and not to lead us gently to it by various circuitous approaches.